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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,007	11/03/2003	Earl D. Diem	65899-0727	3670

10291 7590 10/27/2004

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EXAMINER

CHIN, GARY

ART UNIT PAPER NUMBER

3661

DATE MAILED: 10/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/700,007

Applicant(s)

DIEM, EARL D.

Examiner

Gary Chin

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/3/03 & 9/17/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to because there is no descriptive legend provided for each of the structural elements shown in figure 1 currently represented in a form of hollow rectangles. Further, figures 9 and 13 are illegible. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because the sentence begins with “This abstract is submitted” on lines 5-7 should be deleted. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

3. Claims 4-5, 7, 10, 12-15, 17-19 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 4, 12 and 22, the phrase “measured between one of said upper and lower voltages and the other of said upper and lower voltages” is misdecriptive since a time period can not be measured if one of the voltages is a lower (or upper) voltage and the other voltage is also a lower (or upper) voltage. It is suggested to change it to read “measured between said upper and lower voltages” to rectify the aforementioned problem.

As per claim 5, line 3, “engine throttle position” should be “said engine throttle position” in order to avoid the antecedent basis problem. Similarly, “engine RPM” on line 3 of claim 7, “a first set of instructions” on lines 1-2 of claim 10, “said time period” on line 5 of claim 13, “sensor temperature” on line 1 of claim 15, “a pre-validation test” on line 3 of both claims 17 and 18, “said software” on line 2 of claim 18 and “said reading of sensor temperature” on line 1 of claim 19 should be “said engine RPM”, “said set of instructions”, “said second time period”, “said sensor temperature”, “said pre-validation test”, “said software system” and “said sensor temperature” respectively.

Claims that have not been specifically indicated are rejected for incorporating the above errors from their respective parent claims by dependency.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3661

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 6-9 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Heuston et al (patent no. 5585552).

As per claims 1, 8-9 and 11, figures 1, 3 and columns 3-8 of the Heuston et al reference clearly disclose the claimed diagnostic testing system for a vehicle including an oxygen sensor (item 101), an analyzer having a user interface (items 111, 115 and col. 8, lines 22-67) and a communication link (item 113) between the analyzer and the vehicle to obtain data from the oxygen sensor. Further, the claimed diagnostic heuristic to analyze the data and the output generated by the diagnostic heuristic are clearly taught in figure 3 and col. 8, lines 22-67 of the Heuston et al reference.

As per claims 2-4 and 12, the claimed oxygen sensor voltage and the voltage ranges between an upper voltage and a lower voltage in a generally sinusoidal manner over a time period is shown in item 305, figure 3 (also see fig. 5) and col. 4, lines 61-67 to col. 5, lines 1-2 of the Heuston et al reference.

As per claims 6 and 13, the claimed feature associated with the cross-count voltage is taught in figure 5 and col. 6, lines 26-41 of the Heuston et al reference.

As per claim 7, the claimed RPM data is taught in col. 5, lines 17-20 of the Heuston et al reference.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3661

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5, 10 and 14-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heuston et al (patent no. 5585552) in view of Tamura (patent no. 4928518).

As per claims 10, 14, 16-18 and 20-22, the claimed limitations therein have been met by the Heuston et al reference for the reasons set forth in the above paragraph with the exception of the pre-validation test. However, such pre-validation test has been routinely employed in any conventional diagnostic system to ensure that the test is being conducted with proper system components and under proper test conditions. Further, the Tamura reference in column 2 teaches that the testing of the oxygen sensor is conducted only when certain conditions or pre-validation test (see col. 2, lines 32-35) is being confirmed. Hence, it would have been obvious for one skilled in the art to incorporate such well known pre-validation test as taught in Tamura into the Heuston et al system so that a more accurate result in the testing of the oxygen sensor can be obtained.

As per claim 5, 15 and 19, the additionally claimed feature of using engine throttle position and coolant temperature data in testing the oxygen sensor is shown in items 126 and 122, figure 2 of the Tamura reference.

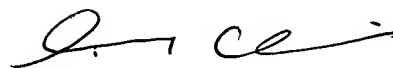
8. The additional references are cited to show the related systems. In particular, the Ohno et al reference (patent no. 6449539) and the Abe et al reference (patent no. 5005129) are cited to show the feature of self-diagnosis or pre-validation test is generally well known in the art. Applicant(s) should consider them carefully when responding to the current office action.

Art Unit: 3661

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary Chin whose telephone number is (703) 305-9751. The examiner can normally be reached on Monday-Friday 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G Black can be reached on (703) 305-8233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



GARY CHIN
PRIMARY EXAMINER